REMARKS

Counsel for Applicant wishes to thank the Examiner for the courtesy of the telephone interview on March 16, 2006. This Amendment presents a clarifying amendment to Claim 1 that was discussed during the interview to address the Examiner's concerns that the claim term "data" could be read to encompass "commands". For the reasons discussed during the interview, and presented below, it is respectfully submitted that rejected independent Claims 1 and 21, and the claims dependent thereon, are allowable over the cited prior art. This Amendment additionally cancels non-elected Claims 27 - 40 that were withdrawn from consideration pursuant to the Restriction Requirement of March 25, 2005, but retains withdrawn Claims 13 - 20 since they depend from Claim 1, which is generic and is deemed to be allowable. Thus Claims 13 - 20 are also deemed to be allowable.

Applicants appreciate the Examiners allowance of Claims 25 - 26, and his indication of the allowability of Claims 11 - 12 in the Office Action of January 18th. As a result, this application is in condition for allowance. Accordingly, entry of this Amendment and favorable reconsideration of this application and allowance of all remaining pending claims are respectfully requested.

The Rejection of Claims 1-10 and 21-24

The rejection of Claims 1-10 and 21-24 under U.S.C. §103 (a) as unpatentable over U.S. Patent No. 6,209,023 to Dimitroff in view of U.S. Patent No. 6,195,703 to

Blumenau is respectfully traversed. For the following reasons, the cited prior art neither teaches nor suggests the claimed invention.

Independent Claim 1 is directed to a method for use by a switch in a storage network, and recites:

> performing, by the switch, the storage service without further involvement from the device, including <u>transmitting any data</u> required to be transmitted as a result of performing the storage service <u>without buffering the data</u>. (*Emphasis added.*)

As pointed out during the response to the previous Office Action, Dimitroff discloses a bridge that performs command processing to translate commands between devices that operate on different interconnection protocols. In particular, Dimitroff discloses a method of virtualizing SCSI semantics into a non-SCSI transport medium, e.g., Fibre Channel. Dimitroff is concerned only with processing "commands" and not with processing of "data". The invention, on the other hand, is concerned with and claims processing of data in connection with storage services in a storage network. It does not claim processing of commands. In response to the Office's position that Dimitroff teaches processing of "command data" (Office Action, pg. 3), and that "commands" comprise "data", it is respectfully pointed out that commands and data comprise different entities, as is well understood by those skilled in the art, and that the specification makes a clear distinction between commands and data, and uses these terms as they are conventionally understood in the art to describe different things.

As understood and as used by those skilled in the computer data processing art, the term "data" refers to information that is or can be processed or produced by a computer, and stored on a data storage device in a storage network. In contrast, the term "command" refers to instructions comprising a character or group of characters that specify and control the operation of a computer system. (See, for example, *Marotta, R., Ed., The Digital Dictionary, A Guide To Digital Equipment Corporation's Technical Terminology, Second Ed., 1984, Digital Equipment Corporation, pp. 104, 81,* enclosed, which makes a clear distinction between data and commands.) Furthermore, the specification also distinguishes between control packets which control the storage services and operation of a storage switch in a storage network and data packets which comprise the information stored on storage devices in the storage network. As explained in the specification, (see, for instance, paragraphs [0076] - [0078], pp. 17-18), control packets are sent to a control CPU 714 which controls the switch (see Figure 7), whereas data packets are sent to Packet Processing Unit 706, which processes packets on-the-fly, meaning that the packets are not buffered. Thus, "data" is stored (written) to and accessed (read) from a storage device, while "commands" control a storage operation.

Accordingly, as discussed during the interview, there is a clear distinction between the terms "data" and "commands", both in the art and as used in the specification and claims. The claimed method of Claim 1, performed in the switch, transmits "data" during the performing of storage services "without buffering of the data". Data does not include commands, and the claimed method has nothing to do with processing of commands. Although believed to be clear, in order to underscore

this distinction and make clear that the method of Claim 1 is directed to storage services involved in storing data, and not in processing commands, as disclosed by the cited Dimitroff reference, Claim 1 is amended herein to recite "receiving, by the switch, a solicitation for a storage service for storing data from a device in the storage network". Since storage systems store "data" and do not store commands, the Examiner agreed that this amendment would distinguish data from commands. Since Claim 1 recites that the switch performs the storage service by transmitting any data required without buffering of the data, Claim 1 distinguishes over both Dimitroff and Blumeneau. Dimitroff, as pointed out, is concerned with processing commands involving different protocols and does not disclose processing data at all. Therefore, Dimitroff does not disclose transmitting data "without buffering the data" as recited in Claim 1. Moreover, Blumeneau explicitly teaches a system in which a storage controller accesses data from a storage device and writes data to the storage device via a cache memory and, accordingly, teaches caching of data to perform storage services (see Blumeneau, column 4, lines 39-56).

Independent Claim 21 distinguishes over the cited prior art for reasons similar to the reasons that Claim 1 distinguishes over the cited prior art. As pointed out to the Examiner during the interview, Claim 21 (which is in an original claim) already recites "receiving, by the switch, data to be written to the mirrored virtual target" and "multicasting, by the switch, without buffering the data to both members [of a virtual target] for writing in accordance with the flowID" (emphasis added). Therefore, since Claim 21 requires that data be written to a virtual target, the claim distinguishes "data" from "commands" for the same reasons discussed above with respect to Claim 1.

Moreover, for the same reasons discussed with respect to Claim 1, Claim 21 distinguishes over the cited art since it also recites that data is handled "without buffering" as recited in Claim 1. Accordingly, Claim 21, and Claims 22 - 24 which depend from Claim 21 are deemed to allowable over the cited prior art for the same reasons that Claims 1-10 are allowable.

Entry of This Amendment is Proper

During the interview, the Examiner indicated that an amendment after final according to that presented herein might not be entered. It is respectfully submitted that this Amendment is entitled to be entered, since it complies fully with the Office policy and intent to expedite examination and prosecution of pending applications. The amendment of Claim 1 herein is entirely consistent with the original claims that were considered and examined by the Office in the prior Office Actions, and is merely for clarifying purposes. It does not change what has been consistently claimed and argued, and does not raise any new issues which would necessitate a further search.

Applicants, in their specification, in their claims, and in their arguments to the previous rejections stressed that the invention pertains to data, i.e., information, which is stored on storage devices in a storage network. Not only is there a clear distinction in the specification between commands and data, this distinction is strikingly evident in the claims which include elements that recite both "data" and "commands". For example, Claim 11 calls for a receiving both "a data write command" and "a ready-to-receive-data indicator . . . that specifies an amount of data it can receive". Claim 22 also calls for a "data write command". These claims indicate that Applicants

understood there to be a difference between data and commands, and used these terms differently in their original claims. These original claims were already the subject of examination in the first and second Office Actions, and demonstrate that Applicants have from the outset been claiming storing of data.

Accordingly, the clarifying amendment made to Claim 1 is consistent with the claims previously examined and asserted, and raises no new issues which would necessitate a further search. Claims terms are to be interpreted as they would be by one of ordinary skill in the art, and in the light of the specification. Until the final rejection was received, applicants had no indication of any possible reading by the Office of the term "data" to include "commands", since both the art as well as the specification and claims used the terms "data" and "command" to refer to different things. However, in view of the final rejection, and to clarify that "data" does not include commands, the present amendment to Claim 1 was proposed during the interview to advance this case. This amendment is consistent with that which applicant has been claiming all along, as demonstrated by reference to the other claims under examination, and the Office has already searched the added subject matter. Accordingly, it is respectfully submitted that this amendment is entirely proper, raises no new issues, and should be entered.
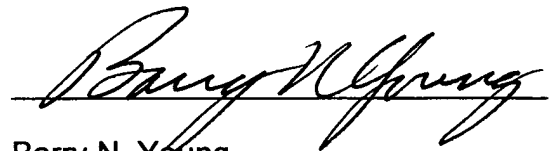
Conclusion

Since Claim 1 is now deemed to be allowable, and is generic to Claims 13 - 20, it is respectfully submitted that Claims 13 - 20 which depend directly or indirectly from Claim 1 and which were withdrawn from consideration pursuant to the Restriction

Requirement should also be allowed. Applicants have cancelled the other previously

non-elected and withdrawn Claims 27 - 40 in order to place this case in condition for

allowance.

In view of the foregoing, this application is now deemed to be in condition for

allowance, and early allowance of Claims 1 - 26 is respectfully requested.

Dated: March 18, 2006   Respectfully Submitted,

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THE DIGITAL DICTIONARY

A Guide to Digital Equipment Corporation's Technical Terminology

SECOND EDITION
REVISED AND EXPANDED

ROBERT E. MAROTTA, EDITOR

digital™
DECbooks

operator specified

m formed with the
1 refer to a collection
il he can replace it
2 it with the
2 domain from which
:. The user can also
hen have several
See also current.

MSG (SPETS)

in straight, parallel
arrow tubes with
lat permit the radia-
1 parallel to the

overlapping in the
arbled data and

:al layer of DECnet
2 that one or more
with the local sta-

command *n.*

DIGITAL-specific

An instruction, generally an English word, typed
by the user at a terminal or included in a com-
mand procedure that requests the software moni-
toring a terminal or reading a command procedure
to perform some predefined operation.

generic

A character or group of characters that specifies
or causes an operation to be performed by a com-
puter system.

VAX DATATRIEVE

An instruction, usually associated with Common
Data Dictionary (CDD) that performs data descrip-
tion functions. In DATATRIEVE, a command is
distinct from a statement. DATATRIEVE com-
mands cannot be combined with each other and
cannot be used in statements. See also
statement.

VAX/VMS

An instruction, generally an English word, typed
by the user at a terminal or included in a com-
mand procedure that requests the software moni-
toring a terminal or reading a command procedure
to perform some well-defined activity. For exam-
ple, typing the COPY command requests the sys-
tem to copy the contents of one file into another
file.

command dispatcher *n.*

RSX-11M

The command dispatcher, MCR . . . , is a task that
takes commands typed at a terminal and passes
them to DCL (DIGITAL Command Language) or
MCR (monitor console routine) or to some other
CLI (command language interpreter) task that exe-
cutes commands.

command file *n.*

VAX/VMS

A file containing commands and data that the
command interpreter can accept in lieu of the
user's typing the commands individually on a ter-
minal. Thus, command procedures provide a
means of automatically passing commands to the
operating system. In addition, they permit users
to employ such programming techniques as loops,
counters, labels, and symbol substitution to set up
elaborate command sequences that can be
altered through user interaction. Command proce-
dures can also be submitted to the system for
processing as batch jobs. Same as command
procedure and indirect command file.

command interpreter *n.*

RSX-11M and RSX-11M-PLUS

A system feature that makes it possible to com-
municate with the operating system from a termi-
nal. RSX-11M and RSX-11M-PLUS provide two
CLIs: DCL (DIGITAL Command Language) and
MCR (monitor console routine).

VAX/VMS

A procedure-based system code that executes in
supervisor mode in the context of a process to
receive, to check the syntax of, and to parse com-
mands typed by the user at a terminal or submit-
ted in a command file.

command language *n.*

generic

A vocabulary of words and symbols used to direct
computer system operations.

command language interpreter (CLI) *n.*

generic

A program that translates a command or operation
code into machine code.

DACTLU *n.*

DECnet

The acronym for deactivate logical unit. An SNA (systems network architecture) session control request issued by the SSCP (system services control point). SSCP is a command processor in the S/370 SNA access method that controls system resources. A successfully executed DACTLU terminates an SSCP-LU session and any LU-LU sessions in which the LU (logical unit) participates. The LU addressed in the command is then no longer available to the system. The characteristics of an SSCP-LU session are defined by the FM Profile 0, TS Profile 1 protocol set. Same as deactivate logical unit.

DACTPU *n.*

DECnet

The acronym for deactivate physical unit. An SNA (systems network architecture) session control request issued by the SSCP (system services control point). SSCP is a command processor in the S/370 SNA access method that controls system resources. A successfully executed DACTPU terminates an SSCP-PU session and all SSCP-LU and LU-LU sessions for the LUs (logical unit) controlled by the PU (physical unit). The PU addressed in the command is then no longer available to the system. The characteristics of an SSCP-PU session are defined by the FM Profile 0, TS Profile 1 protocol set. To SSCP, the protocol emulator is a physical unit. Same as deactivate physical unit.

damping *n.*

generic

The process of suppressing vibration or oscillation.

DAP *n.*

DECnet

The abbreviation for data access protocol. A set of standardized formats and procedures that facilitate the creation, deletion, transfer, and access of files between a user process and a file system in a network environment. Same as data access protocol.

Darlington amplifier *n.*

generic

A two-transistor amplifier having its collectors connected and the emitter of the input transistor connected to the base of the second transistor.

data *n.*

generic

Information that can be processed and/or produced by computers.

VAX/VMS

A general term referring to any representation of facts, concepts, or instructions in a form suitable for communication, interpretation, or processing.

DATA *n.*

generic

A statement that lists values to be assigned to READ statement variables.

data access protocol (DAP) *n.*

DECnet

In the network application layer of DNA (DIGITAL Network Architecture), the protocol used for remote file access and transfer. Same as DAP.